

CLAIMS:

1. A light-collimating system for collimating light from a light source,
a plurality of elements, each element including at least a first wall and at least
a second wall,

the first wall of an element and the second wall of an adjacent element being
5 spaced with respect to each other at a side of the light-collimating system facing the light
source, said spacing between said first wall and said second wall defining an aperture
window for admitting light from the light source into the light-collimating system,

the first wall of said element and the second wall of said adjacent element
forming a wedge-shaped structure widening in a direction facing away from the light source,

10 the first wall and the second wall at a side facing the wedge-shaped structure
being provided with a specular reflecting surface,

the wedge angle θ_w of the first wall and the second wall with respect to the
normal on the aperture window being adjustable for enabling adjustable collimation.

15 2. A light-collimating system as claimed in claim 1, characterized in that an
adjustable positioning plate supports the first wall and the second wall at a side facing away
from the wedge-shaped structure,

by moving the positioning plate in a direction away from the aperture window
the wedge angle θ_w becoming smaller, and vice versa.

20 3. A light-collimating system as claimed in claim 1 or 2, characterized in that the
wedge angle θ_w ranges between approximately 0° and approximately 25° .

4. A light-collimating system as claimed in claim 3, characterized in that the
25 wedge angle $\theta_w \leq 15^\circ$.

5. A light-collimating system as claimed in claim 1 or 2, characterized in that the
wedge-shaped structure is configured from a plurality of walls forming a diaphragm-like
wedge-shaped structure.

6. A light-collimating system as claimed in claim 1 or 2, characterized in that the first wall and the second wall are straight walls.
- 5 7. A light-collimating system as claimed in claim 1 or 2, characterized in that the first wall and the second wall are curved walls, preferably, are parabolically-shaped walls.
8. A light-collimating system as claimed in claim 1 or 2, characterized in that the first wall and the second wall of each element are provided on a supporting member at a side facing away from the light source, and that the supporting member between the first wall and the second wall of each element is provided with a light-reflecting element comprising a specular and/or diffuse reflecting material.
- 10 9. A light-collimating system as claimed in claim 8, characterized in that the specular reflecting material is selected from the group formed by silver and aluminum, and in that the diffuse reflecting material is selected from the group formed by aluminum oxide, barium sulfate, calcium-pyrophosphate, titanium oxide and yttrium borate.
- 15 10. A light-collimating system as claimed in claim 9, characterized in that the diffuse reflecting powder material is mixed with particles of Alon-C.
- 20 11. A light-collimating system as claimed in claim 1 or 2, characterized in that the first wall and the second wall are made from glass, metal or plastic.
- 25 12. A light-collimating system as claimed in claim 1 or 2, characterized in that, at the location of the first and second wall facing the light source, the distance d_{sp} between the first wall and the second wall of each element is larger than the wavelength of visible light.
- 30 13. A light-collimating system as claimed in claim 12, characterized in that the distance $d_{sp} \geq 10 \mu m$.
14. A light-collimating system as claimed in claim 12, characterized in that the height h_w of the wedge-shaped structures is in the range $0.5 \times d_{aw} \leq h_w \leq 50 \times d_{aw}$, where d_{aw} is

the distance between the first wall of an element and the second wall of an adjacent element at the location of the first and second wall facing the light source.

15. A light-collimating system as claimed in claim 1 or 2, characterized in that the
5 light-collimating system further comprises a lens assembly, comprising a plurality of lenses, each lens cooperating with one of the wedge-shaped structures.